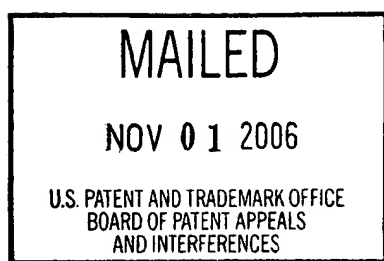


The opinion in support of the decision being entered today was *not* written for publication and is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES



Ex parte ELIE-JEAN RAAD

Appeal No. 2006-2454
Application No. 09/386,506
Technology Center 2600

HEARD: October 19, 2006

Before FRANKFORT, OWENS and HORNER, *Administrative Patent Judges*.
HORNER, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134(a) from the examiner's final rejection of claims 1, 4-6, 8, 9, 13, and 15. Claims 7 and 14 are objected to as being dependent on a rejected base claim. Claims 2, 3, and 10-12 have been canceled.

We reverse the examiner's rejections and remand to the examiner for further consideration of the claims.

BACKGROUND

The appellant's invention relates to a quick change lens mount for connecting a lens assembly to a camera board. Claims 1 and 9 are representative of the subject matter on appeal, and a copy of these claims can be found in the appendix to the appellant's brief.

The examiner relies upon the following as evidence of unpatentability:

| | | |
|-------------------------------|--------------|---------------|
| Tanaka <i>et al.</i> (Tanaka) | 4,104,649 | Aug. 01, 1978 |
| Palmer | 5,455,711 | Oct. 03, 1995 |
| Weng | 6,011,661 | Jan. 04, 2000 |
| | Filed | Apr. 07, 1998 |
| Nemoto | JP 10-073864 | Mar. 17, 1998 |

The following rejections are before us for review.

1. Claims 1, 4-6, 9, and 13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Weng in view of Tanaka and further in view of Palmer.
2. Claims 8 and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Weng in view of Tanaka and further in view of Palmer in view of Nemoto.¹

Rather than reiterate in detail the conflicting viewpoints advanced by the examiner and the appellant regarding this appeal, we make reference to the final office action (mailed September 11, 2003) and the examiner's answer (mailed September 8, 2004) for the examiner's complete reasoning in support of the rejections and to the appellant's brief (filed February 23, 2004) and reply brief (filed November 10, 2004) for the appellant's arguments.

¹ Although the examiner did not actually repeat the rejection of claims 4-6, 8, 13, and 15 in the Answer, we understand this appeal to be from the rejections as stated in the final rejection, including those of claims 4-6, 8, 13 and 15.

OPINION

In reaching our decision in this appeal, we have carefully considered the appellant's specification and claims, the applied prior art, and the respective positions articulated by the appellant and the examiner. As a consequence of our review, we make the determinations that follow.

In the rejection of independent claims 1 and 9, the examiner determined that Weng discloses a quick change lens mount for connecting a lens assembly to a camera board comprising a base (1) attached to the camera board having a quick connect coupling for removable coupling to the lens assembly (threaded chamber 11) and means for affixing the base, a filter, and a filter frame to the camera board. Answer, pp. 3-4; *see also* Answer, pp. 6-7. The examiner concedes that Weng does not teach that the base has an interior opening and that the quick connect coupling comprises a pair of slots to permit passage of a key affixed to an end of the lens assembly and a pair of keyways extending circumferentially from ends of corresponding ones of the slot, the slots and keyways dimensioned to receive keys of a lens assembly so as to lock the lens assembly to the base upon engagement of the keys of the lens assembly to respective keyways on the base. Answer, p. 4; *see also*, Answer, p. 7. The examiner relies on Tanaka for the teaching of a base (30) that has an interior opening and a quick connect coupling comprising slots (29a-c) to permit passage of a key (35) affixed to an end of the lens assembly and keyways (29) extending circumferentially from ends of corresponding ones of the slots, as recited in the claims. Answer, p. 4; *see also* Answer, p. 7. The examiner further found that the design of Tanaka of "a base and lens assembly with keys and

keyways is beneficial over a threaded connection because it allows for faster replacement of a lens assembly.” Answer, p. 5. Therefore, the examiner found that it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the threaded portion of the base of Weng with the base of Tanaka with keyways so that a lens assembly with keys can be connected to the base to allow for a faster replacement of a lens assembly. Answer, p. 5; *see also* Answer, p. 8.

The examiner concedes that Weng in view of Tanaka does not teach that the lens assembly has a removable adapter having a threaded interior opening to receive a threaded end of a lens housing and a base insert end, the base insert end having keys for engagement with the keyways. Answer, p. 5; *see also* Answer, p. 8. The examiner relies on Palmer for the teaching of a coupling adapter that has threads on one side that correspond to the threads of the base of a camera and threads of a different size that correspond to the threads of an optical lens assembly so as to allow for an unassociated lens assembly to be coupled to the optical housing. Answer, pp. 5-6; *see also* Answer, p. 8. The examiner found that it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the camera system of Weng in view of Tanaka with an adapter as taught by Palmer that has threads on one side to connect a lens with a threaded coupling and to provide on the other side of the adapter coupling means that corresponds to the coupling mechanism of Tanaka “[i]n order to allow lenses that are threaded to be connected to the camera base of Weng in view of Tanaka et al.” Answer, p. 6; *see also* Answer, p. 9.

The appellant contends that there is no motivation to modify the assembly of Weng with the teachings of Tanaka and Palmer because by modifying the assembly of Weng with the teaching of a quick connect, as taught in Tanaka, you defeat the ability that was previously present in the Weng assembly to attach a threaded lens to the camera mount. The examiner must restore this ability by using the adapter taught in Palmer. The appellant argues, “It is pure sophistry to suggest that one skilled in the art, having no knowledge of the claimed invention, would substitute the coupling of Tanaka for that of Weng, then look to yet another reference to restore the coupling ability which was just defeated.” Reply Brief, p. 3.

We agree with the appellant, and find that the examiner has not set forth a prima facie case of obviousness. In particular, we find that absent hindsight, one of ordinary skill in the art at the time of the invention would not have been motivated to modify the lens mount of Weng with the pawl quick connect coupling of Tanaka, thereby destroying the ability in Weng to connect the CCD assembly to a lens with a threaded end, and then modify the lens mount further to regain this functionality by using the adapter of Palmer. Accordingly, we do not sustain the examiner’s rejection of claims 1, 4-6, 9, and 13.

With respect to the rejection of claims 8 and 15, the examiner further relied on Nemoto to teach that it is advantageous to manufacture a lens mount out of an elastic material. Final Office Action, p. 11. We find that the teachings of Nemoto do not cure the deficiencies of Weng and Tanaka. In particular, Nemoto discloses a lens mount having a base (41) attached to a camera board (51). Nemoto, para. 0009. The base (41) includes threaded coupling (Figure 1) for receiving a lens (43) (Figure 3). Nemoto does not teach or suggest a “quick connect coupling having a

pair of slots to permit passage of a key and a pair of keyways extending circumferentially from ends of corresponding ones of said slots,” nor does it disclose “a removable adapter coupled to said lens assembly, said removable adapter having a threaded interior opening to receive a threaded end of a lens housing and a base insert end” as recited in claim 1. As such, we do not sustain the examiner’s rejection of claims 8 and 15.

We find it necessary, however, to REMAND this case to the examiner for consideration of the following issue:

During any further prosecution of the application, the examiner should consider whether a rejection of claims 1, 4-6, 8, 9, 13, and 15 under 35 U.S.C. § 103(a) based on the combination of Nemoto² in view of U.S. Patent No. 3,559,542 to Clapp in view of Palmer would be appropriate.

In particular, with regard to claim 1, Nemoto discloses a quick change lens mount for connecting a lens assembly to a camera board (51). The camera board (51) has an image recording device (CCD 53), a filter (61), and a filter housing (10). The filter (61) mounts within the filter housing (10), which is attached to the camera board (51) by screws (47). Nemoto, para. 0014. The lens mount includes a base (41) attached to the camera board (51) via the filter housing (10) by screws (45, 47). Nemoto, para. 0009. The base (41) includes an interior opening and a threaded coupling (Figure 1) for receiving a lens (43) (Figure 3). Nemoto does not disclose a “quick connect coupling having a pair of slots to permit passage of a key

² Although we suggest relying on the Nemoto reference for the teaching of a CCD camera as claimed, the appellant did not appear to dispute the factual findings made by the examiner with regard to the teachings of a CCD camera in Weng. As such, Weng may also serve as an alternate primary reference in an obviousness rejection for the same reasons provided by the examiner in

and a pair of keyways extending circumferentially from ends of corresponding ones of said slots,” nor does it disclose “a removable adapter coupled to said lens assembly, said removable adapter having a threaded interior opening to receive a threaded end of a lens housing and a base insert end” as recited in claim 1.

Clapp discloses an adapter used in a locking and unlocking mechanism for attachment of a lens mounting assembly (21) to a camera body (20) which ensures quick releasing and locking action of a lens. Clapp, col. 1, line 72 – col. 2, line 3. The camera body includes a seating ring (23) with a flange (23A) having one or more keyway notches (26) circumferentially spaced about the inner peripheral portion of the seating ring flange (23A). Clapp, col. 2, lines 39-42. Clapp discloses a removable adapter (lens mounting assembly 21) having a threaded interior opening to receive a threaded end of a lens housing. See Clapp, Figures 6 and 7. The adapter (21) also has a base insert end having locating lugs (26A) which project laterally from the inner or lower end of the lens housing (21). Clapp, col. 2, lines 46-48. The assembly of Clapp further includes a locking collar (28) disposed within and threadingly engaged with seating ring (23) and having keyway notches (31) in axial alignment with notches (26) in an unlocked position. Clapp, col. 2, lines 58-75. To lock the lens assembly to the base, the lens mounting assembly (21) is inserted into seating ring (23) and into locking collar (28). Then, locking collar (28) is rotated to effect axial displacement thereof with respect to seating ring (23) so that an internal shoulder (30) of locking collar (28) overrides and engages with a contacting surface (26B) of lug (26A). The axial displacement of locking collar (28) firmly seats it between lens mounting assembly (21) and flange (23A) of

his previous rejections.

seating ring (23). Clapp, col. 3, lines 20-33. Clapp teaches, *inter alia*, that its quick release and locking mechanism is an improvement over other release and locking mechanisms for interchangeable or detachable lenses because its structure is less complicated to operate and is relatively inexpensive. Clapp, col. 1, lines 30-32. The examiner should determine whether it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the threaded lens mount of Nemoto with the adapter having a quick release and locking mechanism as taught in Clapp in order to more quickly and easily connect interchangeable lenses having threaded ends to the CCD camera of Nemoto. Although the quick connect mechanism of Clapp is similar to the invention recited in claim 1 in that it uses slots and keys for locking engagement, the mechanism of Clapp does not explicitly disclose keyways. Rather, as described above, Clapp uses a rotatable locking ring having engagement surfaces that engage the lugs to lock the lens in place.

Palmer teaches a two-part adapter used to attach a lens to a night vision optical device. Palmer teaches that it was common in the field of optical devices, such as cameras, video cameras, projectors and the like to include a threaded aperture on the device to allow for secondary optical devices to be attached and that a large number of coupling devices exist in the prior art. Palmer, col. 1, lines 23-28 and 36-37. Palmer further teaches that many optical assemblies require bayonet style connectors while others require screw type connectors, such that when a person buys a secondary optical device, the person must also purchase a specific coupling adaptor to properly join the two components together. Palmer, col. 1, lines 41-48. As such, Palmer teaches that bayonet connectors were commonly-used

in the optical device art to attach interchangeable lenses to optical devices, such as cameras.

A bayonet connector or fitting is a term of art that refers to a locking mechanism identical to the slots, keyways, and keys recited in claim 1. A generally-accepted definition of a “bayonet joint” is “a peculiar form of coupling, in which one circular piece, having a slot longitudinal for part of its length and transverse the remaining, is sleeved over another. The interior piece is provided with a stud which enters the slot, and, by turning, the two parts become locked so as to prevent withdrawal by longitudinal movement.” Edward H. Knight, Knight’s American Mechanical Dictionary 252 (1874). Another definition of “bayonet mount” is “a mount in which prongs or bayonets on the rim of the lens or lens accessory of a camera fit into slots in the camera to facilitate quick attachment (as in interchanging lenses).” Webster’s Third International Dictionary, unabridged, 188 (1971). We find it conspicuous that the definition of bayonet mount in the unabridged dictionary specifically defines the term within the context of interchangeable camera lenses, thus further demonstrating that such locking arrangements were commonly known in the optical device field as a way to attach lenses to optical devices.

As such, the examiner should further determine whether it would have been obvious to one having ordinary skill in the art at the time of the invention to have modified the CCD camera of Nemoto, as modified with the adapter and quick connect mechanism of Clapp, to have used a conventional bayonet fitting on the base and base insert end of the adapter to provide a simpler and conventional quick connect fitting.

With regard to claim 9, as described above, Nemoto discloses mounting a base (41) over an image recording device (CCD 43) and affixed to the camera board (51) by screws (45, 47). Nemoto does not describe using an adapter with a quick connect bayonet fitting for attaching the lens to the base. Clapp teaches attaching a removable adapter (lens mounting assembly 21) to a lens assembly via a threaded opening, the adapter having a pair of keys (locating lugs 26A) at an end thereof opposite to the threaded opening (Figures 6 and 7). Clapp further teaches forming a base (seating ring (23) and flange (23A)) to lock to an end of the removable adapter, the base having an opening with slots (keyway notches (26)) circumferentially spaced about the inner peripheral portion of the seating ring flange (23A). Clapp, col. 2, lines 39-42. The slots (26) slidably receive and engage the keys (26A) on the removable adapter. Clapp, col. 2, lines 46-48. Clapp further teaches inserting and locking a lens assembly to the base. Clapp, col. 3, lines 19-22. Again, as indicated above, the examiner should determine whether it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the threaded lens mount of Nemoto with the adapter having a quick release and locking mechanism as taught in Clapp in order to more quickly and easily connect interchangeable lenses having threaded ends to the CCD camera of Nemoto.

Neither Nemoto nor Clapp disclose keyways for slidably receiving and engaging the keys on the removable adapter. Palmer, as described above, discloses that it was common at the time of the invention to use a bayonet fitting for attaching interchangeable lenses to a camera body. Once again, the examiner must determine whether it would have been obvious to one having ordinary skill in the art at the

time of the invention to have modified the CCD camera of Nemoto, as modified with the adapter and quick connect mechanism of Clapp, to have used a conventional bayonet fitting on the base and base insert end of the adapter to provide a simpler and conventional quick connect fitting.

We leave it to the examiner to also consider the patentability of the dependent claims in light of the prior art discussed above and any other pertinent prior art of which he is aware.

CONCLUSION

To summarize, the decision of the examiner to reject claims 1, 4-6, 8, 9, 13, and 15 is reversed and the case is remanded to the examiner for further consideration of the claims.

REVERSED AND REMANDED

Charles E. Frankfort)
CHARLES E. FRANKFORT)
Administrative Patent Judge)

Terry J. Owens)
TERRY J. OWENS)
Administrative Patent Judge)

Linda E. Horner)
LINDA E. HORNER)
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